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Memorandum

To: **LaDonna Turner, Site Assessment Manager**
Technical and Enforcement Branch
U.S. Environmental Protection Agency, Region 6

From: **Dana Bahar, Manager, Superfund Oversight Section**
Ground Water Quality Bureau, New Mexico Environment Department.

Date: **September 10, 2009**

Subject: **Pre-CERCLIS Screening Assessment of Dog Mine, McKinley County, New Mexico: Further action under CERCLA recommended**

Site name	Dog Mine				
City	not applicable	**State**	New Mexico	**Zip code**	not applicable
County	McKinley				
Latitude	35° 20’ 30.77”	**Longitude**	107° 48’ 44.51”		

Site physical description: The Dog Mine currently has a caved decline with wooden hoisting structure, at least 2 open vent holes, numerous waste rock piles bordering an arroyo and other minor drainages, and an impoundment measuring 100’ by 50’ bordering the main arroyo. A stock tank constructed in the arroyo just upstream of a major waste rock pile. Both the impoundment and the stock tank were dry at the time of reconnaissance. One small semi-underground structure is located near the decline.

Site identification: Potential alluvial ground water contamination within the Grants Mineral Belt was identified because background standards established for contaminants of concern for ongoing remedial action associated with the Homestake Mining Company NPL site (CERCLIS NMD0007860935) are generally higher than Maximum Contaminant Levels (MCLs). NMED conducted sampling of private residential wells in subdivisions located in the vicinity of the HMC site, and found that the majority had one or more contaminant concentrations exceeding MCLs.

Site summary: Observations made during NMED’s Site reconnaissance are shown on the accompanying figures. One area of stockpiled ore has elevated radioactivity of 5653 counts per second (cps). The highest radioactivity measured from a waste rock pile was

648 cps (background=28—46 cps). Most waste piles exhibit elevated radioactivity and are located within a major drainage; others nearby show evidence of erosion. The impoundment bordering the drainage has slightly elevated radioactivity. Potential contaminant dispersion pathways include downstream precipitative erosion, wind-blown dispersion, and ground water via entry through alluvium or via vent holes.

Targets: Residences are located near the junction of State Hwy. 605 and 509, approximately 1.78 air-miles east-northeast of the Site. Another residence is located along Haystack Road approximately 2.0 air-miles southwest of the Site, from which another residence is visible further to the west. Other potential targets may include cattle and wildlife.

Closest well sampled to date: irrigation well SMC-22 (1.37 air-miles; 48.2 µg/l total uranium in 2009 sampling [total uranium Maximum Contaminant Level=30 µg/l]).

Site ownership and Potentially Responsible Parties: Surface and mineral rights reportedly are held by the Bureau of Land Management (BLM). Four Corners Exploration Company reportedly last operated the mine in 1975.

File review: NMED staff reviewed the following files:

- Database compiled by Mining and Minerals Division of the New Mexico Energy, Minerals, and Natural Resources Department (07/20/2007).
- Anderson, Orin J., 1980. "Abandoned or inactive uranium mines in New Mexico".
- McLemore, Virginia T. and William L. Chenoweth, 1991. "Uranium mines and deposits in the Grants district, Cibola and McKinley Counties, New Mexico." New Mexico Bureau of Mines and Mineral Resources Open-file report 353.
- Rappaport, Linda, "Uranium deposits of the Poison Canyon ore trend, Grants District," in "Geology and technology of the Grants Uranium Region, 1963. State Bureau of Mines and Mineral Resources.
- Souder, Miller, and Associates, 2008. "Abandoned uranium mine field survey project."
- U.S. Geological Survey, 1997. "Gallup quadrangle NURE HSSR study." OFR-97-492.

Site reconnaissance: NMED staff conducted a Site reconnaissance on June 3, 2009.

Recommendations: A release of CERCLA hazardous substances has been documented at the site. NMED recommends further investigation under CERCLA to assess the risk posed by the site using the Hazard Ranking System.

NMED recommends that the investigation include the following:

1. Sample sediments along drainages to characterize extent of Site-derived waste dispersion.
2. Investigate and characterize ground water impacts.

In addition NMED recommends the following actions be performed to address immediate threats to public health and the environment:

1. Remove waste with elevated radioactivity.
2. Plug open shafts and vent holes.

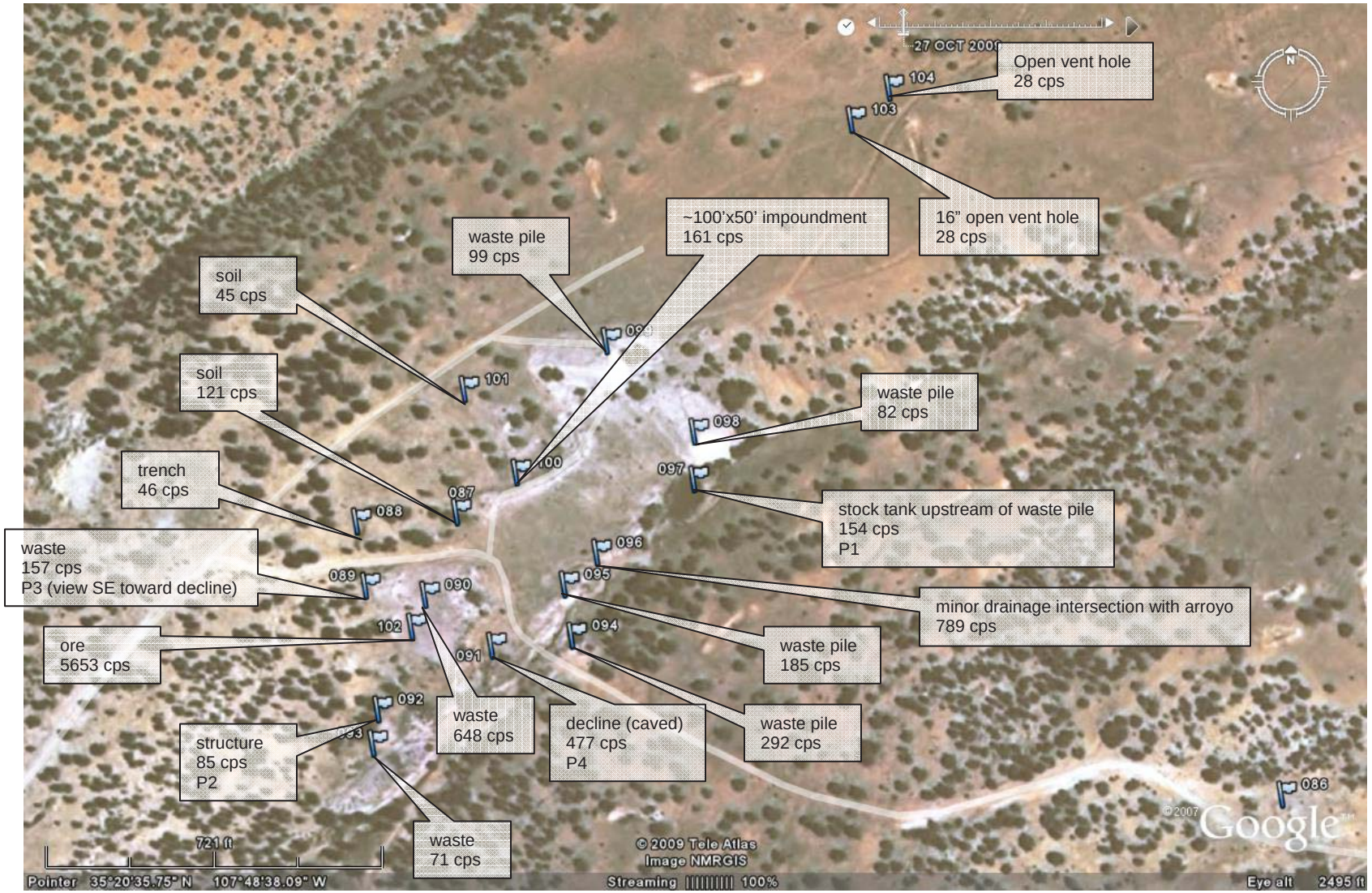

Figure 1: Dog Mine—measurements taken on June 3, 2009

"Px" reference the location of photographs on pages following.

P1: Dog Mine stock tank upstream of waste pile

P2: Dog Mine structure

P3: Dog Mine view SE toward decline

P4: Dog Mine decline (caved)